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NATIONAL PHOTOGRAPHIC INTERPRETATION C	Top Secret	25X1

imagery analysis report

SAL-Related Activities Summary Report

25X1

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TABLE OF CONTENTS

INTRODUCTION	2
HIGHLIGHTS	3
SECTION 1	
OFFENSIVE MISSILE ACTIVITY	5
Modernized SS-11	5
SS-13	6
SS-11 and SS-17	-
SS-11 and SS-19	
SS-18	
MISSILE TEST RANGES AND FACILITIES	
Tyuratam	
Plesetsk	
SEMIPALATINSK NWPG SHAGAN RIVER TEST AREA	
ICBM DEVELOPMENT, PRODUCTION, AND TESTING	
DEFENSIVE MISSILE ACTIVITY	
Sary-Shagan Missile Test Center	
Launch Complexes.	
R&D Complex	
•	
Probable Laser Range	
Deployed ABM-Related Radars	
Deployed Abin-Related Radars	14
SECTION 2	
SUBMARINE-LAUNCHED BALLISTIC MISSILES	17
Submarine Production	
Delta-Series SSBN Construction	
New-Series SSBN Construction	
Severodvinsk Construction Activity	
SSBN Dismantlements	
SSBN Overhauls	
Tunneling	
SLBM Test Centers	
Nenoksa Naval Missile Test Center	
Balaklava Missile Test Center	
	20
SECTION 3	
CRUISE MISSILE DEVELOPMENT	21
Testing	21
SECTION 4	
LONG-RANGE AVIATION	23
BEAR	
BISON	
SECTION 5	
ADV-2	63
Introduction	
Historical Development	
	- •

INTRODUCTION

Photographic Interpre	port is the sixth in a series of tation Center. The report co SAL Summary Report publ	=	done by the National and 25X1
NPIC. 80 (TOP SECRET		Activities: Summary Report,	(S), Jun 25X1 25X1
	•	land-based missiles (section 1), submaring-range aviation (section 4), and ADV-2 (section 4)	
2. (TSR) Pertine various substantive are		e, and deception activity is included in t	he discussion of the
3. (TSR) Broad- derived from analysis vehicle was in			period. Information 25X1 esolution film return 25X1 25X1

HIGHLIGHTS

- 4. (TSR) Highlights of this report are summarized below:
 - a. Buildup of silo construction material was continuing at Tyuratam (paragraphs 38 and 49).
 - b. The 32 dismantled ABM launch facilities at launch positions at Moscow were earth covered (paragraph 86)
 - c. New phased-array radar under construction near Moscow (paragraphs 90 through 93)
 - d. Buildup of radar construction components at Gomel indicates a new deployed ABM-related radar may be under construction (paragraphs 101 through 103)
 - e. D-III SSBN unit 12 was in the final phase of fitting-out (paragraph 106)
 - f. Indications of possible D-III SSBN construction beyond unit 12 (paragraph 108)
 - g. Launch preparations at Severodvinsk probably for Typhoon SSBN (paragraph 110)
 - h. NE-04/Typhoon missile loading facility at Severodvinsk (paragraph 112)
 - i. Dismantled Y-Class SSBN unit 4 returned to construction hall (paragraph 115)
 - j. Possible dismantling of Y-I SSBN (paragraph 117)
 - k. High count of 157 BACKFIRE observed during July (see aircraft tables)
 - 1. Possible correlation between ADV-2 testing and BACKFIRE mounted airframe (paragraphs 175 through 184)

Top Secret

- 3 -

LIST OF ACRONYMS AND ABBREVIATIONS

This list in its entirety is UNCLASSIFIED

ABM	Antiballistic missile
ALCM	Air-launched cruise missile
ARD(D)	Floating drydock
AOSR	Radiological liquid carrier
ASAT	Antisatellite
ASM	Air-to-surface missile
CAN/CAP	Canister/capsule
CSF '	Complex support facilities
FTC	Flight test center
GSE	Ground support equipment
HE	High explosives
ICBM	Intercontinental ballistic missile
LAD	Launch assist device
LCF	Launch control facility
LRA	Long-range aviation
MSPT	Multisystem propellant transporter
MSTC	Missile/space test center
MTC	Missile test center
NMTC	Naval missile test center
NPIC	National Photographic Interpretation Center
NWPG	Nuclear weapons proving ground
PAT	Payload-associated transporter
PBV	Postboost vehicle
PGCS	Propulsion guidance control section
POE	Piece(s) of equipment
R&D	Research and development
RP	Reporting position
RTP	Rail-to-road transfer point
SAL	Strategic arms limitation
SALT	Strategic Arms Limitation Treaty
SLBM	Submarine-launched ballistic missile
SMRA	Silo materials receiving area
SNA	Soviet naval aviation
SSB	Fleet ballistic missile submarine
SSBN	Nuclear-powered fleet ballistic missile submarine
SSGN	Nuclear-powered guided missile submarine
SSN	Nuclear-powered submarine
T/E	Transporter erector
TSA	Temporary support area
VLF	Very low frequency
VDCNI	Nuclear ship support harea

- 4 -

Nuclear ship support barge

YRSN

Strategic Land-Based Missiles

OFFENSIVE MISSILE ACTIVITY

5. (TSR) From _______ at least partial coverage was acquired of all 19 operational ICBM complexes, and 1,196 of the 1,398 deployed launch silos were observed at least once. Silo conversion was continuing at nine launch groups containing 66 launchers. All of the silos under conversion are in the mid-to-late stage of construction. The following table summarizes the coverage of deployed ICBM silos. The table does not reflect repetitive coverage.

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	Number of	Number of Launchers	Percent Observed
SS-11 Complexes	Launchers	Observed at Least Once	at Least Once
Drovyanaya	50	50	100
Gladkaya	60	60	100
Olovyannaya	90	90	100
Perm	80	80	100
Svobodnyy	60	55	92
Teykovo	80	51	64
Subtotal	420	386	92
SS-13 Complexes			
Yoshkar-Ola	60	53	88
Subtotal	60	53	88
SS-11/17 Complexes			
Kostroma	90	77	86
Yedrovo	110	53	48
Subtotal	200	130	65
SS-11/19 Complexes			
Derazhnya	90	37	41
Kozelsk	110	97	88
Pervomaysk	90	90	100
Tatishchevo	120	103	86
Subtotal	410	327	80
SS-18 Complexes			
Aleysk	30	30	100
Dombarovskiy	64	64	100
Imeni Gastello	52	45	86
Kartaly	46	45	98
Uzhur	64	64	100
Zhangiz-tobe	52	52	100
Subtotal	308	300	97
Total	1,398	1,196	86

Modernized SS-11

6. (TSR) At least partial coverage was obtained of all six modernized complexes. Of the 420 launch sites, 386 were seen. Periodic maintenance involving one launch group at each of the five complexes was seen.

Drovyanaya

7. (TSR) All 50 launch sites and all of the complex support facilities were seen. On ______ a training exercise was underway at the training site. Several vehicles were on the apron by the open silo door. The missile canister was visible in the silo. Periodic maintenance was observed in Launch Group I during June. No other significant activity was observed.

Gladkaya

8. (TSR) All 60 launch sites and all of the complex support facilities were seen. Periodic maintenance was observed in Launch Group G during June. No other significant activity was observed.

Olovyannaya

9. (TSR) All 90 launch sites and all of the complex support facilities were seen. The possible silo loading/unloading observed in Launch Group H in April and May was completed during June. Periodic maintenance was observed in Launch Group G during July. A silo loading exercise was underway at the training site on when a canvas-covered missile transporter, a silo loader, a truck-mounted crane, and eight support vehicles were on the apron. The canister was visible in the silo. Canvas/netting was on the aprons at site 35F, 38F, and 96L.

- 5 - Top Secret S-003/80 25X1

Perm

10. (TSR) All 80 launch sites and all of the complex support facilities were seen. Periodic maintenance was observed in Launch Group G during July. Canvas/netting covered all 30 silo aprons in Launch Groups I and N. The silo doors were not covered.

Svobodnyy

11. (TSR) Fifty-five of the 60 launch sites and all of the complex support facilities were seen. No significant activity was observed.

Teykovo

12. (TSR) Fifty-one of the 80 launch sites and all of the complex support facilities were seen. Periodic maintenance was underway in Launch Group G during June. No other significant activity was observed.

SS-13

Yoshkar-Ola

13. (TSR) Fifty-three of the 60 launch sites and all of the complex support facilities were seen. Modernization continued and was in the late stage in the E group. Modernization has been completed in Launch Groups A, B, C, and D. Probable periodic maintenance was observed at two sites in Launch Group A in August.

SS-11 and SS-17

- 14. (TSR) Only 130 of the 200 launch sites and 14 of the 20 LCFs (five have been backfilled) at Kostroma and Yedrovo SSM complexes were seen.
- 15. (TSR) The number of completed SS-17 type IIIH silos remained at 150, and the number of SS-11 type IIID silos remained at 50.
 - 16. (TSR) Fifteen LCFs are operational, and five LCFs remain backfilled.

	Total Launch Groups	SS-11 Launch Groups	SS-17 Launch Groups	Launch Groups Under Conversion
Yedrovo	11	0	11	0
Kostroma	9	5	4	0
Total	20	5	15	0

Kostroma

17. (TSR) Seventy-seven of the 90 launch sites, eight of the nine LCFs, and all of the complex support facilities were seen. Probable periodic maintenance was underway at two sites in Launch Group I during July. The previously reported periodic maintenance in Launch Group Q during May was probably prelaunch activity for the SS-11 launch in early June. This activity continued until mid-July.

Yedrovo

18. (TSR) Fifty-three of the 110 launch sites, six of the 11 LCFs, and all of the complex support facilities were seen. No significant activity was observed.

SS-11 and SS-19

19. (TSR) Complete coverage was obtained at one complex and partial coverage was obtained at the other three complexes. Of the 410 launch sites, 327 were seen.

Complex	Total Launch Groups	SS-11 Launch Groups	SS-19 Launch Groups	Launch Groups Under Conversion	Launch Groups Under Modification
Derazhnya	9	3	6	_	ĺ
Kozelsk	11	5	6	_	<u>.</u>
Pervomaysk	9	3	6	_	1
Tatischevo	12		9	3	<u>.</u>
Total	41	11	27	3	2

Top Secret *S-003/80* 25X1

- 20. (TSR) The number of completed type IIIG silos was 330, 30 were under construction, and 20 were undergoing modification. The number of type IIID silos remained at 50.
- 21. (TSR) Probable periodic maintenance was observed at two complexes and involved three launch groups.

Complex	SS-11 Launch Groups	SS-19 Launch Groups	Launch Groups Under Conversion	Launch Groups Under Modification	LCF
Derazhnya					
A		X		X	Undergoing modification*
В		X			Complete
C		X			Complete*
D		X			Complete*
E		X			Complete
F		X			Complete
G	X				Complete
Н	X				Complete
I	X				Complete
Kozelsk					
G		X			Complete
Н		X			Complete
I		X			Complete
J		X			Complete
K	X				Backfilled
L		X			Complete
M	X				Backfilled
N		X			Complete
O	X				Backfilled
P	X				Backfilled
Q	X				Backfilled
Pervomaysk					
A		X			Complete*
В		X		X	Undergoing modification*
C		X			Complete
D		X			Complete*
E		X			Complete
F		X			Complete
G	X				Complete
H	X				Complete
I	X				Complete
Tatishchevo					
Α		X			Complete
В		X			Complete
C		X			Complete
D		X			Complete
E		X			Complete*
F		X			Complete
G		X	v		Complete
H		• •	X		Ucon
I		X	v		Complete*
J K			X X		Ucon
K L		Х	Λ		Ucon Complete
L	_	Λ			Complete

^{*}Denotes a modified LCF.

Kozelsk

22. (TSR) Ninety-seven of the 110 launch sites, ten of the eleven LCFs, and all of the complex support facilities were seen. Four of the five backfilled LCFs—MM, OO, PP, and QQ—were unchanged; the fifth, backfilled LCF KK, was not observed. Unidentified activity was observed in Launch Group H in July. At LCF HH, several unidentified vehicles were on the apron and a trench extended from the control support building to the group support area. The area in back of the silo appeared to have been disturbed and the two washer antennas had been excavated. The apron around the silo at each of the launch sites in the group appeared to have been disturbed. At launch site 28H, unidentified vehicles were on the apron, the silo door was open, and the top of the canister was visible. At launch site 30H, the silo door was open and the silo was empty.

- 7 -**Top Secret** S-003/80 25X1

Derazhnya

23. (TSR) Thirty-seven of the 90 launch sites, five of nine LCFs, and all of the complex support facilities were seen. Modification of the launch sites and the LCF in Launch Group C was probably completed during July. Modification was continuing in Launch Group A. Periodic maintenance was underway in Launch Groups F and H.

Pervomaysk

24. (TSR) All 90 launch sites, the nine LCFs, and all of the complex support facilities were seen. Modification of the launch sites and the LCF in Launch Group D was completed during August. Modification was continuing in Launch Group B.

Tatishchevo

- 25. (TSR) One hundred-three of the 120 launch sites, all 12 of the LCFs, and all the complex support facilities were seen. Conversion continued in Launch Groups H, J, and K.
- 26. (TSR) Post-launch activity was observed in Launch Group C during July and August following the early July launches of two SS-19s. This activity had ended at seven of the nine sites observed in the group by ________ At launch site 22C, the exhaust deflector ring was still on the apron. At launch site 25C, the door was open, the exhaust deflector ring was still on the apron, and a truck-mounted crane and numerous vehicles were on the silo apron. A TSA was still present.
- 27. (TSR) Unidentified activity was observed in Launch Group F beginning in late June. The area around the hardened dome antenna and the launch silo appeared to have been excavated at each of the ten launch sites. In addition, the cover had been removed from several of the hardened dome antennas. There were indications that it was necessary to remove the warhead during this activity. The exhaust deflector ring was on the apron at two launch sites during July, and on a type-IV warhead transporter was at launch site 89F. This activity appeared to have been completed by Similar activity was observed in Launch Group D. At several of the sites in this group the area around the hardened dome antenna and the launch silos was disturbed.
 - 28. (TSR) Probable periodic maintenance was observed in Launch Group F during July and August.

SS-18

- 29. (TSR) Complete coverage was obtained at four of the six complexes and partial coverage was obtained at the other two. Of the 308 launch sites, 300 were seen. Periodic maintenance was observed at five complexes involving nine launch groups.
- 30. (TSR) The number of completed type IIIF launch sites is now 272. The remaining 36 silos were still under construction. The number of completed LCFs is now 42; six remain under construction.

SS-18 Launch Group Status

Complex	Launch Groups Complete	Launch Groups Ucon
Aleysk	A,B,C,*D*	E*
Dombarovskiy	A,B,C,D,E,*F,* G,*H,*I*	J*
Imeni Gastello	A,B,C,*D,*E,F*G*	Н*
Kartaly	A,B,C,D,*E*,G*	F*
Uzhur	A,B,C,D,*E,*F* G,*H*,I*	J*
Zhangiz-Tobe	A,B,C,D,*E,*F* H*	G*
Total Groups	42	6

^{*}Denotes a modified LCF.

Aleysk

31. (TSR) All 30 launch sites, the six LCFs, and all of the support facilities were seen. Conversion was almost complete in Launch Group E. During August, two SS-18 missiles, with SS-18 MOD-4 PBV/PGCS containers, were at the RTP. The dome antennas and/or silo doors of Launch Group D were net covered.

Dombarovskiy

32. (TSR) All 64 launch sites, the ten LCFs, and all of the complex support facilities were seen. Conversion of Launch Group J was almost complete. Training site 33X was completed in August. Two SS-18 missiles with SS-18 MOD-4 PBV/PGCS containers were in the RTP receiving area in August. A probable propellant transfer operation for an SS-18 MOD-4 PBV propulsion module was observed in the RTP on

25X1 25X1

25X1

25X1

- 8 -

S-003/80 25X1

This suggests that the propulsion module is fueled at the RTP prior to being delivered to a site. Probable periodic maintenance was observed in Launch Groups A and F during July.	25X1
Imeni Gastello	
33. (TSR) Forty-five of the 52 launch sites, the eight LCFs, and all of the complex support facilities were seen. Conversion was in the very late stages at Launch Group H. Four SS-18 missiles with SS-18 MOD-4 PBV/PGCS containers were in the receiving area of the RTP during July. These missiles are probably for Launch Group G. Minor excavating was underway around the hardened dome antennas at LCF BB and collocated launch site 7B and at LCF CC and collocated launch site 17C. Probable periodic maintenance was observed in Launch Groups B and F during July.	
Kartaly	
34. (TSR) Forty-five of the 46 launch sites, the seven LCFs, and all of the complex support facilities were seen. Conversion was completed in Launch Group G during July. Conversion was continuing in the very late stages in Launch Group F. Probable periodic maintenance was observed in Launch Group C in early June and in Launch Group F in July.	
Uzhur	
35. (TSR) All 64 launch sites, the ten LCFs, and all of the complex support facilities were seen. Conversion was completed in Launch Group I between late June and early July. Conversion was continuing in the very late stages in Launch Group J. Two SS-18 missiles and MOD-4 PBV/PGCS containers were in the RTP during July. Probable periodic maintenance was observed in Launch Group D during June and in Launch Group A in late July and early August. Minor excavating was observed around the hardened dome antennas at several of the launch sites in Launch Groups C and F.	
Zhangiz-Tobe	
36. (TSR) All 52 launch sites, the eight LCFs, and all of the complex support facilities were seen. Conversion of Launch Group H was complete in August. Launch Group G was in the late stages of conversion. During June and July, probable periodic maintenance was observed in Launch Group B. Equipment observed at the RTP during June, July, and August included two SS-18 missiles with MOD-4 PBV/PGCS containers and a modified LCF capsule with associated cylinders. This equipment is probably for Launch Group H, the most recently converted launch group.	25X1
MISSILE TEST RANGES AND FACILITIES	
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25X1

Table 1. Tyuratam ICBM Launch Activity

	Launch Site	Observation	25 X 1
	V7	On imagery, the spent	25 X 1
	R7N	LAD was identified On imagery, the spent LAD was identified and damage to the silo apron was evident; more than 30 of the apron paying blocks had been scattered on both sides of the R7N silo	25X1
	R7S	On imagery, the silo door was open, burn marks were on the silo apron, and the spent	25 X 1
	S9N	LAD was identified On imagery, the silo door was open and the silo apron was darkened	25X1
Plesetsk			
west silo at launch site 28; canvas-covered launch site 11; activity at launch site 21; and	d silo component d construction of a		
northwest silo at launch site 28 and the IIII	H door pocket an	ndrical silo component seen on the apron of the d silo door have been installed in the silo. Also, at ed under construction between the two silos.	
46. (TSR) In early July, all of the silo remained covered. An LCF capsule was at sections and a portion of it removed from from the SMRA.	the SMRA on	the capsule had been cut into the remaining section had also been removed	25X1 25X1
47. (TSR) At launch site 11 on support vehicle were on the apron next to t covered object in the bed of the truck was activity was terminated between launched from Plesetsk on	he site control bu parked on the GS	be II warhead van, a truck-mounted crane, and a inker, and an open-bed cargo truck with a canvas- E alignment markers at the silo. This unidentified probably prelaunch activity for an SS-13 Mod-2	25X1 25X1 25X1
48. (TSR) Probable refurbishment act seven trucks remained in the area.	ivity was continui	ng at Launch Site 21. Numerous crates and five to	
49. (TSR) A long canvas-covered tent over one of the railspurs at the RTP. The ter which was seen 6.0 kilometers east of mobile	nt structure is simi	was observed on imagery of ilar to another tent-like structure, 59 by 2 1979.	25X1 25X1
50. (TSR) During the reporting peri- replaced. No additional activity was observe	od, the canvas co	overing the silos at Launch Sites 14 and 22 was	
*DEFSMAC. 272152Z, Aug 80 (SECRET **Extracted material is SECRET only.			25 X 1
SEMIPALATINSK	NWPG SHAG	SAN RIVER TEST AREA	-
51. (TSR) During this reporting perio and 89 and at vulnerability area 108. A vuln the end of August, HE test preparations were	erability test was	onstruction continued at silo vulnerability areas 23 conducted at silo 6 during the reporting period. By o 5 and at location 116.	
Area 23			
			25 X 1
	- 10 -		

25X1

vulnerability tests in September 1979. However, silo 6 was apparently subjected to less overpressure and ground motion than any of the silos in the 1979 tests. This was a result of a greater distance between the rosettas, a greater distance between the silo and the rosettas, a shallower furrow bed, and a smaller arch-roofed simulation structure. In addition, the rosettas consisted of only five drill shafts instead of the usual seven. 54. (TSR) The rosettas were about 30 meters apart and 60 meters from the silo. In 1979, the rosettas were 25 meters apart and 50 meters from the silos. The furrow bed at silo 6 was slightly larger in total area than those observed in 1979, but the furrows were only about deep. The best estimate of the furrow depth for the 1979 tests is The arch-roofed simulation structure over silo 6 was about in length and meters in height. The arch-roofed simulation structure used in 1979 was about 20 meters in length and meters high. The only feature of the test which appeared to be the same as in the 1979 tests was the position of the large-diameter drill shaft, 45 meters from the silo.	25X1 25X1
55. (TSR) The quantity of HE used at silo 6 was probably less than that used in 1979 because of the variations in the test site described in the previous paragraph. An unusual feature of the test was the removal of the door from the silo. The door was removed during early-stage test preparations and was not replaced for the test. However, some type of closure, with a layer of earth over it, was used to replace the original door which remained on the ground off to one side.	
56. (TSR) Modification of silo 5 (modified type IIIG) was almost complete at the end of August. The modified headworks, the door pocket, and the door had been installed in the silo. The preparations at the silo indicate that the test will be similar to recent HE tests conducted at other ICBM silos at Shagan River. Three seven-shaft rosettas were drilled 60 meters from the silo and the large bore drill shaft was 45 meters from the silo. Several prefabricated concrete arch sections were adjacent to the silo on indicating that an archroofed HE simulation test (HEST) structure would be assembled over the silo.	25X1
57. (TSR) The test preparations at this modified type IIIG silo were slightly different from the preparations observed at silo 2 (standard type IIIG) in September 1979. That silo vulnerability test involved a three-bay HEST structure and three seven-shaft rosettas 50 meters from the silo.	
58. (TSR) At silo 3 (type IIIF/SS-18), probable damage was observed for the first time in July. Immediately after the test, no damage was observed at the silo although a gap between the east side of the silo and the surrounding soil indicated some horizontal movement or vibration of the silo. The direction of the blast and overpressure from the test was west to east. No activity was observed at the silo from mid-	25 X 1
October 1979 until when the silo door was opened. Imagery of showed that the door was propped up by two external supports. This suggested that the door hinge and/or the hydraulic system in the silo may have been damaged.	25 X 1
59. (TSR) No activity was observed at silos 1, 2, and 4 or at silo mockups 7, 8, and 9.	
Area 89	
60. (TSR) At silo area 89, construction continued at silos 10 through 13. Construction had not been resumed at silo 14 as of the end of August. Silos 10 through 13 were in late stages of construction. Preparations were underway for constructing service aprons and access roads for delivering missiles and capsules. The instrumentation bunkers near each silo were in the mid-to-late stages of construction. Instrumentation cable trenches had been extended from silo 13 to its bunker. No activity was observed at the 30-meter-diameter excavation although a packed-earth road was being extended to the site. No activity was observed at the triple-fence secured, partially underground structure.	
61. (TSR) Preparations for the HE calibration test at location 116 were progressing rapidly. Location 116 is just outside the southwest corner of silo area 89. On the site consisted of a silo mockup, a large-bore drill shaft, three seven-shaft rosettas, and an instrumentation bunker under construction. Prefabricated concrete arch sections for a HEST structure were adjacent to the silo coring. This calibration test is probably in preparation for future tests at silo area 89 and/or area 108.	25 X 1
Area 108	
62. (TSR) At vulnerability area 108, site construction has been ongoing since the last SAL-related report. At the large trench, additional rectangular conduit sections were installed in the narrow section of the trench.	
Approximately 220 meters of conduit have been installed to date. Rail sections were next to the trench during most of the reporting period. Rail sections still have not been observed in the bottom of the conduit. Concrete slabs replaced some of the wood panels on top of the conduit, indicating that portions of the conduit were probably complete. A wall was constructed over the western end of the conduit, and the surrounding trench was backfilled to grade level. Approximately 60 meters of prefabricated concrete arch sections were assembled over a portion of the completed conduit. The arches span 180 degrees and are about 15 meters wide at the base.	
Approximately 220 meters of conduit have been installed to date. Rail sections were next to the trench during most of the reporting period. Rail sections still have not been observed in the bottom of the conduit. Concrete slabs replaced some of the wood panels on top of the conduit, indicating that portions of the conduit were probably complete. A wall was constructed over the western end of the conduit, and the surrounding trench was backfilled to grade level. Approximately 60 meters of prefabricated concrete arch sections were assembled over a	

assembled over the conduit. These arches spanned about 270 degrees (omega shaped) and the upper part of the conduit was inside the arch. About 15 meters of the arch structure on the east end was being covered with rebar mesh. This suggests that concrete will be poured over this portion of the arches. It is not yet known whether the arches are a part of the structure or for containing HE. If HE is later placed in the arched structure and only the east end of the structure is hardened, then the structure will probably serve as a shock tube or dynamic airblast simulator (DABS). If the entire structure is hardened, then HE will probably be placed throughout the structure and it will serve as a HEST structure. A large-bore shaft was drilled about 75 meters from the west end of the conduit. A probable instrumentation bunker was under construction north of the conduit.

65. (TSR) Little activity was observed at the two silo corings in the southern portion of area 108. The probable silo base and some of the probable silo wall segments were installed in the large coring. Concrete was poured into the wall segments after installation. On a silo component similar to a headworks base was adjacent to the coring. The component was assembled from two 180-degree sections. At the smaller silo, additional coring was observed, but no components were delivered for the silo.

25X1

25X1

25X1

66. (TSR) Two other excavations were observed within area 108. One excavation is parallel to the east fenceline while the other is parallel to the west fenceline. Little activity was observed in the excavations. Small-bore drilling operations were underway adjacent to the trenches during most of the reporting period. The shafts at both excavations were drilled in a row parallel to the excavations. By 16 shafts were adjacent to the eastern excavation and eight shafts were adjacent to the western excavation.

ICBM DEVELOPMENT, PRODUCTION, AND TESTING

Dnepropetrovsk

- 67. (TSR) Handling rings, some with diameters similar to the diameters of the SS-5 and SS-17 missiles, and other pieces of equipment were adjacent to one of the large assembly/fabrication buildings at Dnepropetrovsk Missile Development Production Center. This equipment, which began to appear in January 1979, may be a part of either SS-5 or SS-17 component or final assembly production lines. If this equipment is a part of a production line, it indicates the probable termination of SS-5 production or a reduction in SS-17 production.
- 68. (TSR) There is supportive evidence for the termination of SS-5 production and for the reduction of SS-17 production. Dismantling of SS-5 launch sites continues with only four complexes currently operational. SS-17 deployment has been completed and the number of 1980 test launches is much lower than in 1978 and 1979.

Leningrad

69. (TSR) Possible silo coring activity was identified at Leningrad Silo Components R&D Facility on in a cleared area in the east-central portion of the facility. The possible coring was in an early stage of construction, having begun between An unidentified object was in the center of the excavation. This object does not resemble known silo components and may be related to construction. Tracks for a traveling gantry crane are on either side of the excavation. A mobile crane was adjacent to the excavation and between the parallel tracks.

DEFENSIVE MISSILE ACTIVITY

Sary-Shagan Missile Test Center

Launch Complex B

70. (TSR) During this reporting period, Complex B was observed 15 times (13 complete and two partial a GALOSH canister was engaged in each of the three surface launch positions. From coverages). On 25X1 launch position C3 was occupied (canister engaged) each time it was observed and launch positions C1 and C2 were unoccupied. 71. (TSR) On a CAN/CAP silo loader was observed at the Missile Assembly Checkout Facility. 25X1. a CAN/CAP silo loader was backed up to the silo at launch position C5. On the silo door 25X1 was open, a canvas cover was over the silo aperture, and a burn mark was around the silo. On silo C5 25X1 was being refurbished.

72. (TSR) Construction was continuing on the two possible fueling points.

Launch Complex D

73. (TSR) Launch Complex D was observed 18 times (nine complete and nine partial coverages). At complex D, the sliding shelter on the B-1 building (the probable laser facility) was closed each time it was

Top Secret S-003/80 25X1

- 12 -

imaged. Throughout this reporting period, the inflatable cover over the radome at the EGG HEAD radar remained deflated, thus, showing the longitudinal ribbing on the radome.

remained deflated, thus, showing the longitudinal ribbing on the radome.	
Launch Complex F	
74. (TSR) Launch Complex F was observed 34 times (18 complete and 16 partial coverages). No activity was observed at launch position 3A. Refurbishment at launch silo 3B followed the April SH-08 missile launch. Refurbishment appeared to be complete by early August and there was little activity around this silo after	25X1 ∠5X1
75. (TSR) The silo at launch position 3C was undergoing modification or conversion. On a mobile crane was in operation at the silo. The northern half of the silo door was removed and, during June and July the silo was being deepened. A crane had removed earth from the base of the silo. The earth was spread	25X1
over the ground on the northwest side of the silo. By a canvas cover had been placed over the silo aperture just inside the silo. Since then, little activity has been observed around the silo; however, the crane remained on the silo apron.	25 X 1
76. (TSR) At new launch position 3D, preparations for the first SH-08 missile launch from this launcher were observed in early June. An SH-08 missile transporter was aligned with the launch tube between and The transporter was not present on but had returned with a missile by Evidence of a missile launch by included a raised empty launch tube, the removal of the work platform from the flame bucket, the burned flame bucket, and all the power conduits covered for the first time. Preparations for a second launch from this launcher were observed between An SH-08 transporter was backed up to the launch tube on and remained until The transporter was not observed on the erected launch tube contained an SH-08 missile and a transporter and a checkout van were onsite. The missile and the transporter were not present on a missile was again erected in the launch tube and a transporter and checkout van were onsite.	25X1 25X1 25X1 25X1 25X1 25X1 25X1
Operations Support Base	
77. (TSR) The Operations Support Base was observed 17 times (eight complete and nine partial coverages). From 12 to 13 GALOSH canisters were observed at the servicing apron in the Explosives and Solid Propellant Handling Facility. Four GALOSH canisters remained at the main hangar of the airfield.	
R&D Radar Facilities 1, 2, and 3	
78. (TSR) R&D Radar Facility 1 was imaged seven times, while R&D Radar Facilities 2 and 3 were imaged nine times.	
79. (TSR) The previously reported possible clutter screen at R&D Facility 1 was externally complete on	25 X 1 25 X 1
80. (TSR) No significant activity was observed at R&D Radar Facilities 2 and 3.	
R&D Complex	
81. (TSR) The Sary Shagan R&D Complex, Facility A, was imaged 25 times during the reporting period. The dome on the south building was over the coelostat and the cooling pond was operating on all coverages. There was no activity at or near the north building during the reporting period. By mid-August, the water that was previously standing midway up the drive-in ramp of the north building had evaporated/receded.	
	25X1

- 13 -Top Secret

Moscow ABM Facilities

86. (TSR) The 32 dismantled launchers at the deployed ABM complexes were still inoperative as of Between early June and mid-August all 32 of these positions, including the GSE alignment markers, were covered with dirt. Arch-roof sections and wall sections for a probable GALOSH canister shelter, such as that at complex E05, were brought to complex E24 in late July and early August. Sufficient components for two shelters are at E33, for a second shelter at E05, and for one shelter at E31.

Launch Complex	Date Observed	Launch Positions Observed	GALOSH Canister Engaged	Launchers Dismantled	
E05		16	7	8	25X1
		12	4	7	
		9	4	5	
		16	7	8	
		16	4	8	
		6	4	2	
E24		12	6	4	
		16	6	8	
		16	5	8	
		15	6	7	
		16	5	8	
E31		16	5	8	
		16	6	8	
		16	6	8	
		16	6	8	
		10	3/4	5	
		4	'	4	
		16	6	8	
		16	5	8	
E33		16	4	8	
		16	7	8	
		16	7	8	
		3	1	2	
		16	8	8	
		6	6	0	
		15	6	7	
		16	7	8	
		16	7	8	

87. (TSR) The Borovsk ABM Support Facility was observed twice during this reporting period. Forty-six GALOSH canisters were present on and 47 on Seven curved metal segments of unknown function were brought to an apron near the missile assembly and storage building between	25X1 25X1
88. (TSR) The Moscow SAM and ABM Training Facility was observed six times. A GALOSH ABM canister was engaged in the launcher on	25 X 1
89. (TSR) The DOG HOUSE and CAT HOUSE battle management radar facilities were imaged one time and three times, respectively. No significant activity was observed at either facility.	
Deployed ABM-Related Radars	
90. (TSR) Pushkino Phased-Array Radar (Figure 1) was identified under construction 25.5 nautical miles (nm) north of Moscow on imagery of	25X1
91. (TSR) The radar structure is 152-meters square and pyramidal in shape. It is in a large rectangular excavation with an adjacent underground building on the northeast side. The sides of radar face 60, 150, 240, and 330 degrees and are sloped from the vertical. Three open trenches extend south about 1,000 meters to an area that will probably contain cooling equipment. Two of the open trenches, one to the east and one to the west, contain large conduit sections. The third trench, to the east, contains pipe sections.	25 <u>X</u> 1

92. (TSR) Associated facilities include a construction support area and a transformer yard about 1.3 nm to the west. Preliminary construction activity, tree cutting for an access road, was first visible in May 1978. By August 1978, the access road was under construction and clearing was in progress for the construction support facility. In August 1979, the floor of the radar structure was complete and walls were being constructed below ground level on the east and south sides.

- 14 - Top Secret S-003/80 25X1

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93. (TSR) The latest imagery, acquired on showed considerable construction progress since The four sloped sides of the radar had been extended upward and a new trench was observed under construction in the transformer yard. The trench spans about 40 percent of the distance to the radar and	25X1 25X1
contains four cableways which were being enclosed in a concrete conduit. About 10 percent of the trench, the portion that originates at the transformer yard, had been backfilled. Construction activity and additional	
construction material was in the vicinity of the radar. 94. (TSR) The Pechora Phased-Array Radar Facility was observed five times. The previously reported	
possible beam forming/side lobe suppression device was in a late stage of construction. When last observed on all of the triangular lattice structures on the western side of the transmitting antenna had been erected	25X1 25X1
on a double row of buried concrete blocks. About 75 percent of the triangular lattice structures on the eastern side of the transmitting antenna had been erected on a double row of buried concrete blocks.	207(1
95. (TSR) The Lyaki Phased-Array Radar Facility was not covered during this reporting period.	
96. (TSR) The Sary-Shagan Phased-Array Radar North was observed once. No significant activity was observed.	
97. (TSR) The Ust Kamchatsk Radar Facility was observed five times. No significant activity was observed.	
	25 X 1

- 15 -Top Secret

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98. (TSR) The Mishelevka, Olenegorsk, and Sary-Shagan HEN HOUSE Radar Facilities were imaged five times, seven times, and one time, respectively. No significant activity was observed at any of these radar facilities.	
99. (TSR) The Mukachevo and Skrunda HEN HOUSE Radar Facilities were not imaged.	
100. (TSR) The Sevastopol HEN HOUSE Radar Facility was imaged 14 times. On new paneling was observed being applied to the right antenna face. By both antenna faces had been repaneled.	25X1 25X1
Phased-Array Radar Components at Gomel Electronics Plant	
101. (TSR) The presence of phased-array radar environmental cover segments and shipping crates at the Gomel Electronics Plant suggests that a new Pechora/Lyaki type phased-array radar is under construction in the USSR. These components are probably not for the newly identified phased-array radar at Pushkino. 102. (TSR) The number of phased-array radar environmental cover segments and shipping crates at this plant has increased since September 1978. These components are similar to those observed during the construc-	-
tion of the Pechora and Lyaki Phased-Array Radars which are now externally complete.	
103. (TSR) In September 1978, six environmental cover central segments (108 required for a transmitting antenna) and 15 probable receiver antenna component shipping crates (exact number required has not been determined) were observed at the plant. In May 1979, 24 central segments, 108 environmental cover side segments (108 are required for a transmitting antenna), and 260 shipping crates were present. The number of central segments and shipping crates continued to increase, and on 50 environmental cover central segments and 700 receiver antenna shipping crates were present. Because of clouds, the numbers of environmental cover side segments could not be determined.	25 X 1

- 16 -**Top Secret**S-003/80 25X1

Submarine-Launched Ballistic Missiles

SUBMARINE-LAUNCHED BALLISTIC MISSILES

Submarine Production

Delta-Series SSBN Construction	
104. (TSR) Usable coverage of the Severodvinsk complex was obtained on 41 occasions.	
through at least the submarine had departed the Severodvinsk complex for its initial sea trials. On a D-III SSBN returned and was at the main quay where it remained through This was probably unit 11. This unit was probably again on sea trials between and on A D-III SSBN (probably unit 11) was at the main quay on and between Positive identification of this submarine as unit 11 was complicated by the presence of another D-III SSBN at Severodvinsk Nuclear Submarine Special Support Facility (NSSSF) between This unit was not at the NSSSF after	25X1 25X1 25X1 25X1 25X1 25X1
106. (TSR) Launch preparations for D-III SSBN unit 12 continued on launch rail D at construction hall unit 12 had been launched and positioned at the main quay where fitting-out continued through at least D-III unit 12 was at the calibration facility, which indicates that it is in the final phase of fitting-out and will probably go on sea trials in the near future.	25X1 25X1 25X1
107. (TSR) The movement of flotation device supports from launch rail D to launch rail C on suggests that at least one additional D-III SSBN may be launched from construction hall 1. Although the flotation device supports are not in their final alignment, this pattern is similar to the one used during the roll-out and launching of D-III SSBN units 11 and 12. The identification of a Yankee/Delta-type reactor plate on and probable Delta-series outer hull plates during late July and early August suggests that continued D-III SSBN production is likely. Based on the pace of launch preparations observed during January and February 1980 for D-III unit 12 and its subsequent roll-out in late May, the roll-out of a submarine on launch rail C could occur during late 1980.	25X1 25X1 25X1
108. (TSR) While evidence for continued D-III SSBN construction is strong, it has been impossible to conduct detailed analysis of pressure hull sections because of the amount of roofcover over the staging areas. This also makes an estimate of other submarine construction programs at Severodvinsk less certain. In addition, prior to the launch of the Oscar SSGN, it was presumed that the new-type reactor plates seen at Severodvinsk were intended for the Typhoon SSBN and/or the SSGN believed to be under construction in hall 1. The launch of the Oscar SSGN, however, made it a logical choice for the new reactor plate and raised the possibility that the Yankee/Delta-type reactor plate may be used on Typhoon-series SSBNs. Similarly, the probable Delta-series outer hull plates could be intended for the Typhoon or for additional units of the Oscar SSGN.	
109. (TSR) Although a detailed analysis of the hull sections was not possible, significant movement of hull sections under the sheds was noted during August and indicates that the loading of an undetermined type of submarine hull was probably in progress.	
New-Series SSBN Construction	
110. (TSR) Preparations for a launch from buildingway 2 of construction hall 3 have been underway since at least the launch dock support cradles on the ledges of the launch basin were aligned with launch rail 2. The launch dock which had been outside the launch basin since had been returned to the basin and was floating free in front of launch rail 1. Two large flotation devices were on launch	25X1 25X1
rail 2 on These devices were used for a weighted test of the launch rails at launch rail 1 prior to the launch of the Oscar SSGN and also prior to the operational use of the transfer facility at the east quay. By the trough for the launch dock support cradles had been bridged and the flotation devices were no	25X1 25X1 25X1
longer observed. The door of the construction hall was partially opened and the flotation devices had probably been moved inside for a weighted test of the rails which bridge the gap over the sliding caisson. By the launch dock had been aligned with launch rail 2. On the sliding caisson was open, the gap was bridged by rails, and the flotation devices had been returned to launch rail 2. Launch preparations have	25 X 1 25 X 1
remained static since however, a launch could occur at any time. The rail systems of launch rails 2 and 3 consist of six rails each, as opposed to two rails on launch rail 1. Therefore, the use of launch rails 2 and 3 permit the launching of heavier submarines. The clearing of the entire length of the launch dock, as well as the testing of the rail system, suggests that a submarine considerably heavier and longer than the Oscar SSGN will be launched, probably the Typhoon.	25 X 1
Severodvinsk Construction Activity	
111. (TSR) The installation of roof panels and side walls on the rigid framework over the staging platform and loading rails between construction hall 3 and fabrication building 2 had been completed with the exception of the side wall at the north end of the staging platforms.	
112. (TSR) A new T/E was assembled on the quay at Severodvinsk Naval Base West near the new gantry crane. On a load simulation test of the T/E was in progress utilizing a load simulator similar to the one seen at Nenoksa Naval Missile Test Center Launch Facility D where the NE-04 missile has been tested. On	25X1 25X1
- 17 -	

S-003/80

25X1

Top Secret

- 10 mates NIF 04
a 19-meter NE-04-associated missile railcar similar to the one seen at Nenoksa and also at constructio 25X1 hall 3 at Shipyard 402 was in tandem with the T/E. By the gantry crane was over the railcar and T/25X1 and a probable missile handling collar was upright on the T/E. The presence of the NE-04-associated equipment suggests that this area will support the Typhoon/NE-04 system. However, the facility could also be used to support other platforms and systems.
113. (TSR) By the new arch-roofed building (47 by 9 by 9 meters) in area B was bein 25X1 bunkered, and an area was being graded for at least one additional bunker. A railspur was under construction from the bunker toward Severodvinsk Naval Base West.
New-Series SSGN Construction
114. (TSR) Fitting-out of the Oscar SSGN was continuing at the main quay. The Oscar has 24 SS-NX-19 missile tubes, 12 on each side of the sail. SS-NX-19 missile loading trays were attached to the missile tubes on numerous occasions. On a possible SS-NX-19 missile airframe was on the quay and on the bow of th25X1 submarine. It could not be determined if this was an actual missile or a training device. The function of the canvas-covered area on the bow of the Oscar SSGN has not been determined.
SSBN Dismantlements
115. (TSR) Y-class SSBNs. Dismantled Y-class units 1 and 2 remained at the main quay at Severodvinsk Shipyard Yagry Island. Some minor topside activity was continuing; however, no reactor work or major reconstruction activity was observed. Unidentified reactor work was continuing on unit 4 at Shipyard 402 through at least flotation devices had been attached to the hull, and by th25X1 submarine had been positioned inside the launch basin on launch rail A at construction hall 1. Between 25X1 the submarine had been moved into the construction hall, probably for extensive overhaul/modifica25X1 tion.
116. (TSR) The dismantled Y-class unit 3 remained on the open repairway adjacent to hall 1 at Petrovka Naval Base and Shipyard. The bow and stern sections of the pressure hull may have been rejoined, however, the outer hull plating has not been replaced in this area.
117. (TSR) The active dismantling of an SSBN in compensation for D-III SSBN unit 11 which went on sea trials between has not yet been confirmed. The Y-I SSBN at Severodvinsk NSSSF with th25X1 missile tube doors open since satisfies the initial phase of dismantlement. The walking deck between th25X1 missile tubes on this submarine was removed between Figure 2). This is the first positiv25X1 indication since the opening of the missile doors that this submarine may be dismantled. Removal of the walking deck has taken place on previous units that were undergoing overhaul and is not a reliable indication of dismantlement. Also, scaffolding was not placed over the sail of any of the previously dismantled Y SSBNs as has been with this SSBN since Scaffolding over the sail is normally associated with overhaul rather tha25X1 dismantlement. If this is dismantlement, rather than overhaul, this would be the fifth Y SSBN unit to be dismantled. A crane served, out-of-water position for dismantling a submarine is not presently available at Severodvinsk since the basin gate at Shipyard Yagry Island is blocked because of maintenance. The missile tube doors and missile tubes could be removed while the submarine is still in the water as was done on unit 3 at Petrovka. Additional activity associated with dismantlement must take place before overhaul can be ruled out.
SSBN Overhauls
118. (TSR) D-class SSBNs. Overhaul and refueling of the two D-I SSBNs in the repair halls at Shipyard Yagry Island since December 1979 and February 1980 were continuing.
119. (TSR) Y-class SSBNs. The Y-I SSBN removed from the repair hall at Shipyard Yagry Island between
120. (TSR) Overhaul was completed on one Y-I SSBN and two others were in various stages of overhaul/refueling at Petrovka. Post-overhaul fitting out was completed on the Y-I SSBN which had been removed from the repair hall in April 1980; it had departed the shipyard between Significant post25X1 overhaul refit/repair observed on this unit includes probable electronics, bow sonar, and missile-bay work. The Y-I SSBN which entered the repair hall between remained inside the hall25X1 The reactor access plate for this unit remained on the quay next to the repair hall. The Y-I SSBN which arrived at the slanted pier in December 1979 was removed from the ARD(T) and was at the main fitting-out quay in late July 1980. A work platform had been installed on the aft part of the sail. All 16 missile tubes were open on this unit throughout the reporting period, except for 25X1 121. (TSR) The Y-I SSBN which was at Petropavlovsk K Shipyard Seldavaya Bay in March, returned to Petropavlovsk K Submarine Base and Ship Repair Yard in early June after the completion of minor upkeep and maintenance.

- 18 -

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122. (TSR) H-class SSBNs . The H-II SSBN which entered the open ARD(D) at Petropavlovsk K Shipard Seldvaya East on
Tunneling
123. (TSR) Construction was continuing at a slow pace at Strelok Strait Submarine Base Pavlovskogo Bay. A probable steamline is being installed to the first personnel adit. No other significant external activity has been observed. Tunneling at Ara Guba and Sayda Guba was also continuing.
SLBM Test Centers
Nenoksa Naval Missile Test Center
124. (TSR) Launch Facility D. Missile-related activity was observed at the facility in June 1980. On 25X1 the erector/loader cover, launch tube cover, and crane were outside the facility where they were prior to 25X1 the launch of an NE-04 in April. The personnel hoist housings and platforms were along the security fence. On the crane and launch tube cover had been returned to the launch site. On the erector/loader 25X1 cover was again in place and a slight discoloration was noted around the launch area.
125. (TSR) Checkout/repair of the erector/loader was observed in August. On the erector/-25X1 loader was partially erected. It had been lowered by It was raised again on and work was 25X1 apparently being performed on the mechanism. By the erector/loader had been lowered.
126. (TSR) Launch Facility C. On several unidentified objects were on the north side of the 25X1 launch tower building. By the number of objects had increased to approximately six. They appeared 25X1 to be conical and were 25X1
Balaklava Missile Test Center
127. (TSR) No significant SLBM activity was observed at Balaklava Missile Test Center during the reporting period.

- 20 -

SECTION

Cruise Missiles

CRUISE MISSILE DEVELOPMENT

Testing

128. (15R) Cruise missile-related activity at Nenoksa Naval Missile Test Center was observed at the cruise missile support area and at Launch Facility A.	
129. (TSR) At the cruise missile support area three new SS-NX-19 crates had arrived by a fourth crate was present. On three of the SS-NX-19 crates appeared to be open. By three SS-NX-19 crates had been moved to the RTP across the road. By more crates had been moved to the RTP. On SS-NX-19 crates were at the facility, including two on flatcars at the RTP. (There was a reduction in the number of SS-NX-19 crates at Severodvinsk Naval Missile Storage between On three SS-NX-19 crates were in the old SLBM compound adjacent to the east end of the cruise missile support area. This may mean that the cruise missile support area has been expanded to include this compound. On a new SS-NX-19 crate was in front of the high-bay building in the cruise missile support area. A canvas-covered probable airframe was adjacent to the crate and a crane was extended over the airframe.	25X1 25X1 25X1 25X1 25X1 25X1
130. (TSR) At Launch Facility A, launcher A-2 was turned to an azimuth of the SS-NX-19 loading tray and a crane were adjacent to the launcher. By the tray and crane had been moved near launcher A-1. By two SS-NX-19 crates had been brought into the facility and were between launchers A-2 and A-3.	25X1 25X1
131. (TSR) Cruise missile activity was observed at Chernomorskoye Missile Test and Evaluation Facility in area B on A mobile crane, a crate/canister, and a loading tray were at the twin-tube launcher. The launcher was canvas covered when imaged on	25X1 25X1
132. (TSR) No significant cruise missile activity was observed at Balaklava Missile Test Center or Feodosiya Naval Missile Support Facility.	

SECTION 4

Long-Range Aviation

LONG-RANGE AVIATION

133. (TSR) This portion of the report summarizes SAL-related Soviet air activity. It includes a brief description of unusual BACKFIRE, BEAR, and BISON aircraft activity, as well as tables showing the locations and counts of these aircraft on the dates imaged. All SAL-associated Soviet LRA and SNA bases, all relevant aircraft production facilities, Akhtubinsk FTC, Ramenskoye FTC, Novosibirsk Scientific Institute of Aviation (SIBNIA), and all nine Soviet Arctic staging bases capable of supporting BACKFIRE were imaged.

BACKFIRE Aircraft Activity

Production and Flight Test Center Activity	
134. (TSR) At Kazan Airframe Plant Gorbunov 22, a new high count of seven modified BACKFIRE B was observed on Also, on the same day, two modified BACKFIRE B were at Akhtubinsk FTC. If the previously reported modified BACKFIRE B remained at Ramenskoye FTC, at least ten modified BACKFIRE B prototypes exist.	25 X 1
135. (TSR) The previously reported BACKFIRE B with a airframe mounted under the port wing was not seen at Akhtubinsk Flight Test Center during this reporting period. However, a BACKFIRE B	25 X 1
with a airframe mounted under the port wing was seen on in the Tupolev area of Ramenskoye FTC. This BACKFIRE with the airframe was not seen on subsequent imagery of Ramenskoye. There has been no change in the status of the previously reported BACKFIRE B seen in the new Test, Derelict, and Central Test Area at Ramenskoye.	25X1 25X1
Long-Range Aviation Activity	
136. (TSR) A new high count of 20 BACKFIRE B was observed at Belaya Airfield (Far East Bomber	05144
Command) on imagery of Observations of this number continued for the remainder of the reporting period except from when only 15 BACKFIRE B were present. A new aircraft dispersal area was observed under construction in an area immediately east of the north end of the runway. Initial earth-	25X1 25X1
moving activity was evident as early as and by the end of the reporting period, at least three aircraft revetments were under construction. This activity may be for future deployment of additional BACKFIRE to this airfield. Other construction included the hardening of the revetments along the flight line and an additional quonset-type storage building in the ASM support facility.	25 X 1
137. (TSR) The normal high count of BACKFIRE B at Poltava Airfield (Southwest Bomber Command) remained at 19. However, between 22 were seen here. During this same period, there was a decrease of five BACKFIRE B at Belaya Airfield. The three additional BACKFIRE B seen at Poltava Airfield during this time may have come from Belaya. BACKFIRE have not been seen at the newly constructed maintenance building in the dispersal area. Sliding doors have recently been added to the front of this building. Construction continued on the tactical air-to-surface missile (TASM) facility near the dispersal area. Three bunkers were constructed and were being earth covered, and a concrete pad was constructed near the bunkers. A hard-surface (paving block) road connects the dispersal area and the TASM facility, and a service road between the concrete pad and the bunkers was being paved.	25 X 1
138. (TSR) At Soltsy Airfield (Northwest Bomber Command), the count of BACKFIRE B remained at 20. An additional maintenance shelter, similar to the previously reported shelter, was in the early stages of construction in the maintenance area. No changes to the partially disassembled CLEAT were observed.	
139. (TSR) The BACKFIRE count at Ryazan/Dyagilevo Airfield, the LRA training base, was five BACKFIRE A and six BACKFIRE B at the end of the previous reporting period. The count had decreased to three A and three B by the end of June. The BACKFIRE B that had been previously reported as having sustained damage to the right wing remained on a hardstand adjacent to the BISON/BLINDER repair area. No significant changes to this aircraft were noted. The decrease of two BACKFIRE A corresponded to the identification of one A in the static display area at Kiyev/Zhulyany Airfield and one A seen at Achinsk Airfield East A static display area is near Achinsk Airfield East.	25X1 25X1
Soviet Naval Aviation Activity	
140. (TSR) The count of BACKFIRE B at Bykhov Airfield (Baltic Sea Fleet Air Force) remained stable at 36.	
141. (TSR) At Oktyabrskoye Airfield (Black Sea Fleet Air Force), the BACKFIRE B count remained 17. Wing-mounted AS-4 (KITCHEN) missiles were observed on at least four BACKFIRE B on imagery of This was the third sighting of wing-mounted AS-4 on a BACKFIRE at this installation. A large ASM storage bunker which has been under construction in the ASM support facility was being earth covered	25X1
142. (TSR) A new high count of 12 BACKFIRE B was observed at Nikolayev/Kulbakino Airfield, the SNA training base, on Previous high counts during this period were eight on and ten on partial coverage of The previously reported BACKFIRE B in the BEAR/BADGER repair depot remained here during the entire reporting period. A summary of the activity involving this aircraft follows. On possible engine-related activity was observed; on a crane was being used to detach the starboard	25X1 25X1 25X1
- 23 -	0574
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wing; by the wing had been detached and was lowered from its normal position. Also on the horizontal stabilizers had been removed. By both wings had been detached and lowered from their normal configuration. On the wings had been moved and placed in positions parallel to the aircraft. A horizontal stabilizer was also visible in this area. On the BACKFIRE was not in the depot area and had probably been moved into the large hangar. The wing panels and horizontal stabilizers remained in the BACKFIRE parking area. On the aircraft was probably in the hangar and the wings had been moved to a storage area adjacent to the hangar and remained there for the remainder of the reporting period. By the BACKFIRE had returned to its previous parking position and it remained there until when it probably was returned to the hangar.	25X1 25X1 25X1 25X1 25X1 25X1 25X1
Other BACKFIRE Activity	
143. (TSR) At Ussuriysk/Vozdvizhenka Airfield (Far East Bomber Command), two BACKFIRE B were present on These two aircraft were probably from Belaya Airfield, also in the Far East Bomber Command, where five BACKFIRE were missing during this same time period.	25 X 1
144. (TSR) On imagery ofone BACKFIRE B was seen at Kipelovo Airfield (Northern Fleet Air Force). This was the first observation of BACKFIRE at this SNA base which supports BEAR D and BEAR F regiments. There has been increased renovation and construction activity in the northeast dispersal area, in addition to the nine existing parking hardstands in this area, four probable hardstands, one possible hardstand, and a probable parking apron are being added.	25 X 1
145. (TSR) Six BACKFIRE B were at Olenegorsk Airfield (Northern Fleet Air Force) on They may have participated in a combined surface fleet and naval air exercise in progress in the northern sea areas during the latter part of June. BACKFIRE were last seen here in August 1979.	25X1
146. (TSR) One BACKFIRE B was seen for the first time at Kaliningrad/Proveren Airfield (Baltic Fleet Air Force) on A BACKFIRE was still in the same revetment on imagery of	25X1
147. (TSR) Two additional BACKFIRE A were observed in or near static display facilities. This activity corresponds to the decrease of two BACKFIRE A at Ryazan/Dyagilevo Airfield. One was in the aircraft static display area at Kiyev/Zhulyany Airfield, and the other was at Achinsk Airfield East. An aircraft static display area is near Achinsk Airfield East. There were no changes in the status of the other two BACKFIRE A on static display—at Moscow/Monino Airfield and at Irkutsk Airfield Southeast.	25/(1
148. (TSR) There has been a gradual increase in the number of AS-4 (KITCHEN) shipping containers in the ASM support facilities at Alekseyevka Airfield (Pacific Ocean Fleet Air Force). A total of 35 AS-4 shipping containers were identified here. Twelve were seen here for the first time in May 1980. Construction was continuing on the parking hardstands in the dispersal area and on the parallel taxiway.	•
149. (TSR) Construction activity continued in the suspect BACKFIRE area at Ostrov-Gorokhovka Airfield (Baltic Sea Fleet Air Force). To date, no BACKFIRE or related ground service equipment has been seen here.	•
150. (TSR) On imagery of two BACKFIRE B were seen in flight on an easterly heading west-northwest of Chernyakhovsk Airfield approximately 45 nm east of Kaliningrad.	25X1 25X1
151. (TSR) All nine Arctic staging bases capable of supporting BACKFIRE were imaged during this reporting period. BACKFIRE were seen only at Olenegorsk Airfield (Northern Fleet Air Force) where six were	
observed on	25 X 1
BEAR Aircraft Activity	
Long-Range Aviation	
152. (TSR) An unusually high amount of flight activity was observed at Dolon Airfield (Far East Bomber Command) on imagery of when only two BEAR were observed. Normally, 36 BEAR, which make up	25X1
one BEAR A regiment and one BEAR B/C regiment, are present. These missing aircraft may have deployed to Engels Airfield (Northwest Bomber Command), a BISON base, where 16 BEAR A/B/C were seen on and to Mozdok Airfield (Southwest Bomber Command), a BEAR base, where there was a reported increase of	25X1
seven BEAR B on 36 BEAR A/B/C were at Dolon Airfield. ASM activity was in progress at Dolon Airfield on when six BEAR B were observed with centerline-mounted AS-3 (KANGAROO) missiles.	25X1 25X1
Bomber Command) on probably corresponds to the decrease in BEAR at Dolon Airfield on Normally, only 20 BEAR B/C are seen at Mozdok. ASM activity was evident on when two BEAR B and one BEAR C were observed with mounted AS-3 (KANGAROO) and again on when one BEAR B and three BEAR C were seen with mounted AS-3 (KANGAROO).	25X1 25X1 25X1
154. (TSR) The BEAR A and BEAR B/C regiments at Uzin/Chepelevka Airfield (Southwest Bomber Command) were at normal strength. One BEAR B with a mounted AS-3 (KANGAROO) and one AS-3 on a dolly adjacent to a BEAR B were seen on imagery of	25X1

- 24 -Top Secret

Soviet Naval Aviation	
155. (TSR) A high count of 18 BEAR F was observed at Alekseyevka Airfield (Pacific Fleet Air Force) on Low counts of five to seven BEAR F were seen from Corresponding to the low counts of BEAR F at Alekseyevka Airfield was the presence of from six to nine BEAR F at Khorol Airfield East (Pacific Fleet Air Force) during this same period. The increased number of AS-4 (KITCHEN) shipping containers and the construction and renovation activity in the dispersal area and on the parallel taxiway are all probable indications that this airfield may soon receive a complement of BACKFIRE.	25 X °
156. (TSR) There was no change in the status of the static display BEAR at Irkutsk Airfield Southeast, Moscow/Monino Airfield, or Voroshilovgrad Airfield Southeast.	
157. (TSR) At Khorol Airfield East (Pacific Fleet Air Force), the BEAR D reconnaissance regiment was seen at its normal strength throughout this period. From six to nine BEAR F were seen here between and and probably were the BEAR F missing from Alekseyevka Airfield.	25 X ′ 25 X ′
158. (TSR) The BEAR D and BEAR F regiments at Kipelovo Airfield (Northern Fleet Air Force) were seen at normal strength during this reporting period. One BACKFIRE B was seen here on imagery of This was the first sighting of BACKFIRE at this naval aviation base. Continuing construction and renovation in the dispersal area may be an indication of future deployment of aircraft other than BEAR.	25X 25X
159. (TSR) BEAR were not at Kirovskoye Airfield (Black Sea Fleet Air Force) during this period because of runway repair activity.	
160. (TSR) The one BEAR F Variant was seen at Severomorsk Airfield (Northern Fleet Air Force) throughout this reporting period.	
Other BEAR Activity	
161. (TSR) One BEAR C, one BEAR C Modified, one BEAR D, and one BEAR F were seen at Akhtubinsk FTC during this reporting period. At Ramenskoye FTC, one BEAR A and up to five BEAR F were seen.	
162. (TSR) Five BEAR F Variant were usually seen at Taganrog Airframe Plant Dimitrov 86 during this reporting period, and one BEAR C Modified and one BEAR F were at Kuybyshev Airframe Plant Lenin 18.	
163. (TSR) Normal BEAR activity was observed at Belaya Tserkov Airfield where from five to nine BEAR A/B/C were seen in the repair facility.	
164. (TSR) BEAR D and BEAR F were seen in normal strength at Nikolayev/Kulbakino Airfield and at the associated repair facility.	
165. (TSR) One BEAR F was at Saki Airfield (Black Sea Fleet Air Force) on and on all subsequent imagery through The BEAR was not seen on imagery of	25X ²
166. (TSR) BEAR were reported at two BISON bases during this period. On imagery of two BEAR A/B/C were at Ukraina Airfield (Far East Bomber Command), and on 16 BEAR A/B/C were at Engels Airfield (Northwest Bomber Command). The 16 BEAR at Engels Airfield were probably from Dolon Airfield from which both BEAR regiments were missing on the same date.	25X ²
BISON Aircraft Activity	
167. (TSR) No further indication of BISON disassembly was noted at Engels Airfield, Ramenskoye FTC, or at Ukraina Airfield.	
168. (TSR) At Engels Airfield (Northwest Bomber Command), the heavy bomber regiments were seen in normal strength throughout this reporting period. Eight BISON A, eight BISON B without refueling probe, 16 BISON B with refueling prob, and three BISON C are usually seen here. On imagery of six BEAR A/B/C were observed, and on 16 BEAR A/B/C were seen. BEAR are not usually seen at this LRA base.	25X ²
169. (TSR) The BISON heavy bomber regiments at Ukraina Airfield (Far East Bomber Command) were seen at normal strengths during this reporting period. Four BISON A, eight BISON B without probe, 16 BISON B with probe, and four BISON C are usually seen here. On imagery of two BEAR A/B/C were seen here. BEAR are not usually seen at this LRA base.	25X ²
170. (TSR) The normal counts of BISON were observed in the flightline and maintenance areas at Ryazan/ Dyagilevo Airfield during this reporting period.	
171. (TSR) Ten BISON B with refueling probes were seen at Dolon Airfield, a LRA BEAR base, on Normally, from two to four BISON A or BISON B without refueling probe are seen here.	25X 25X
172. (TSR) Probable BISON tankers were at Mozdok Airfield, an LRA BEAR base, where two BISON A or BISON B without refueling probe were observed throughout the reporting period.	
173. (TSR) One BISON B without refueling probe and one BISON B with probe were at Khorol Airfield East from BISON are not usually seen at this naval aviation BEAR base.	25X
174. (TSR) At Ramenskoye FTC, three BISON B with refueling probe and one BISON C were observed	

- 25 -**Top Secret**

throughout this period.

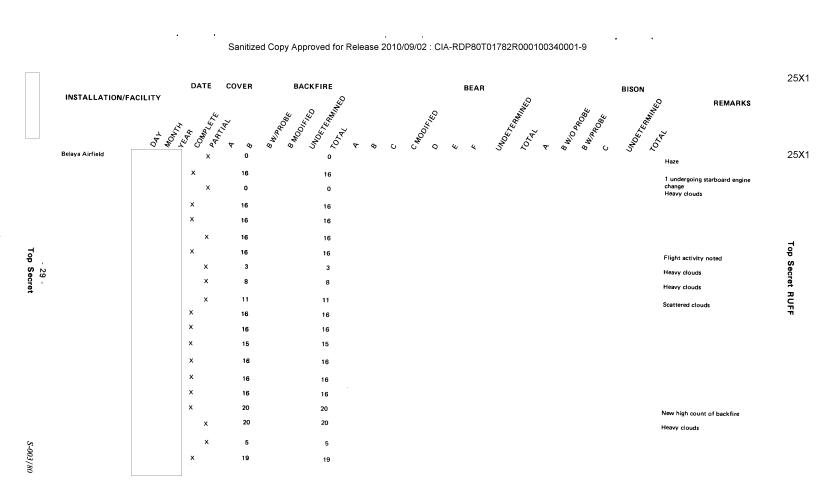
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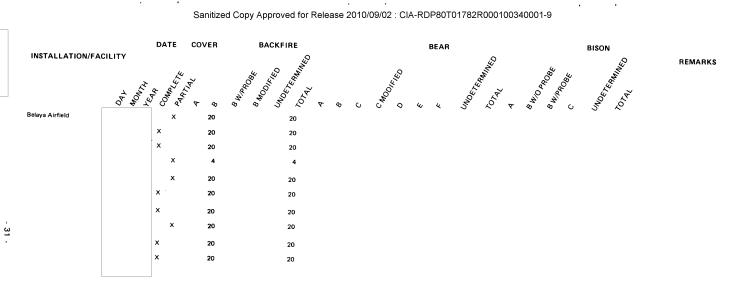
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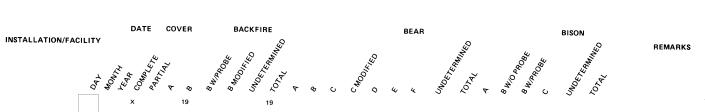
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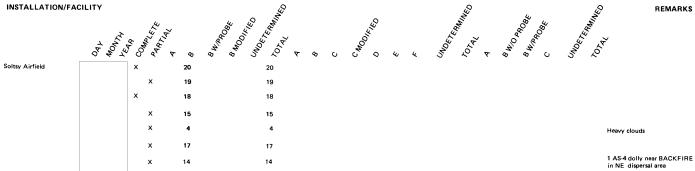


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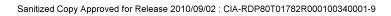
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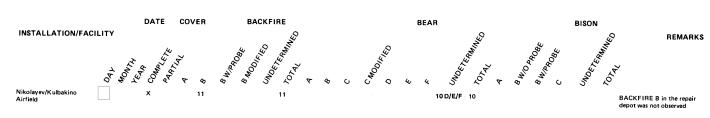
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				s	anitiz	ed Copy Approved for Release 20	10/09/02 : CIA-	-RDP80T	T01782R0001003	40001-9	•	
	INSTALLATION/FACI	LITY	DATI	E COV	/ER	BACKFIRE		BEAR	Q		BISON) REMARKS
		NOW THE THE	of Sold	PARTAL A	&	0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	C NOOIE ED	v 4	Sweetenmes Total	8 W/O 8/O 8E	UNDETERMINES	पॅ
	Oktyabroskoye Airfield		x		17	17						
			×		17	17						
			;	×	7	7						Heavy clouds
			×		17	17						
			;	×	12	12						Scattered clouds
			;	×	16	16						
			;	×	7	7						Heavy clouds
2			;	×	0	0						Heavy clouds
			,	×	17	17						
			,	×	14	14						
			,	×	10	10						
			x		17	17						
			,	×	16	16						
			×		17	17						
)	ĸ	17	. 17						1 AS-4 in ASM support facility
			×		16	16						
			,	ĸ	10	10						Scattered clouds
			,	K	17	17						
			×		17	17						
)	<	13	13						3 AS-4 in ASM support facility

DATE COVER BACKFIRE BEAR ^UNDETERMINED BISON INSTALLATION/FACILITY REMARKS PAPIA Nikolayev/Kulbakino Airfield 3 2 D/F 2 Heavy clouds 1 D/F 1 D/F 7 D/F 3 D/F 10 10 10 10 D/F 10 3 3 D/F 10 x 11 BACKFIRE B in repair depot was not observed Scattered clouds

	INSTALLATION/FACI	ILITY	DATE C	COVER	BACKFIRE		BEAR	1	Q.	BISON	REMARKS
			Complete Parial	, A &	9 Wings 9 MO 19 16 10 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	CMODIFIED	4 4	CMOES	0 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	So of Solution of the solution	
	Nikolayev/Kulbakino Airfield		x	9	. 9	6	5		11		as a tail extension
			x	8	8	5	5		10	* 1 BEAR D ha	as a tail extension
			x	9	1 prob 10			10 D/F	10		
			x	7		4	4	1 D/F	9		
			×	10	10	5	5		10		
			x	10	10	5	5		10		,
			x	8	8	3	5	1 D/E	9		
			×	12	12			10 D/F	10	New high cou	unt of BACKFIRE
i			×	12	12	4	5		10	-	
			×	12	12	4		2 D/F	10		
			×	12	12	4		1 D/E	10		
			x		2	5	4		9		
			x	12	12			10 D/F			
			×	11	11	4	5	1 D/E	10		
			x	7	7	3	5	1 undet	9		
			x	10	10	5	5		10		
			x	12	12	4	4	1 D/F 1 D/F	10		
			x	3	3	2	2		4	Heavy clouds	i .
			×	2	2				0	Scattered clo	
			x	5	- 5	4	5	1 D/F	10	BACKFIRE 6 observed 1 B extension	B in rpr depot was not BEAR D has a tail





- 43 -Top Secret

25X1

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	DATE COVER	BACKFIRE		BEAR	•		BISON	2	
INSTALLATION/FACILIT		6 11.20 16 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	C MODIFED	4 4 Š	Jetennines 7074,	8 WORDS	UNDETERMINE.	O REMARKS	
Dolon Airfield	x	16 14	2	1	33	2	2		
	×			27	27		1 1	Heavy clouds	
	×	13 4	1	2 3 B/C	23	2	2	Scattered clouds	
	x	5& 3 3 prob		2 2 B/C	15		1 1	Scattered clouds	
	x	15 12	6	2	35	2	2		
	x	15	2	2 16 B/C	35		0		
	×	15 13	4& 2 prob	2 prob	36		0		ş
	x	15 12	7	2	36 4		4		9
	x	15 12	7	2	36 4		4		9
	x	1	1		2 4		4	BEAR regiments participating in exercise	3
	×	10b 7 prob		19 B/C	36	• .	4 4	Heavy clouds	
	x	7 5105		37	37 4		4		
	x	14 12	7	2	35 1		1		
	x	10 3	1	2 3	19		0	Heavy clouds	
	×			34	34		1 1		
	x	11 10	7		28 1		1	Scattered clouds	
	x	14	5	2 12 B/C	33 1		1		
	×	14 10	3	2	29 1		1	Scattered clouds	
	x	13 14	4	2	33 1		1		

	INSTALLATION/FACII	LITY				NO.						4	۶	4.	2,00,		REMARKS
	_	S W T	San Complete	8 8 NA	S WOOTERS		- &	C	CMODIFIED	4	4 %	T. C. FRAINE	ZA, A	3808 0 N 8 8 8 8 N 3 S 8 8 N 3 S 8 N 3	Tagny S	Viney, 10,	कें
	Dolon Airfield		x			14	10	6		2		32					Scattered clouds
			x			14	12	6		2		34				0	Scattered clouds
			x			15	12	7		2		36		10		10	Normally, 1 or 2 BISON seen here
			x			14	14	5		2		35				0	
			x			14	13	6		2	1 C/E	36				0	
			x				3				7 B/C	10				0	Heavy clouds
- 47 - Top Secret			x			14	12	7		2		35				0	Scattered clouds
. 47 Se			, x			2	8	2				12			2	2	Heavy clouds
črei			x			14	13	6		2		35	2			2	Scattered clouds
-			x			14	3			2	9	28	2			2	Heavy clouds
			x									0				0	Heavy clouds over aircraft parking areas
			×			15	11	6		2		34	2			2	
			×			15	3			2	7 B/C	27	2			2	Heavy clouds over BEAR B/C parking area
			×			15	13	5		2		35	2			2	
			×			7	13	3		2		25			1	1	ASM exercise in progress
			×			15				2	6 prob B/C	23	2			2	Heavy clouds
			×			15	13	6		2		36	2			2	
			×			15				1	10 prob B/C	26	2			2	Heavy clouds
S-003/			x								2,0	0				0	Heavy clouds over BEAR parking areas

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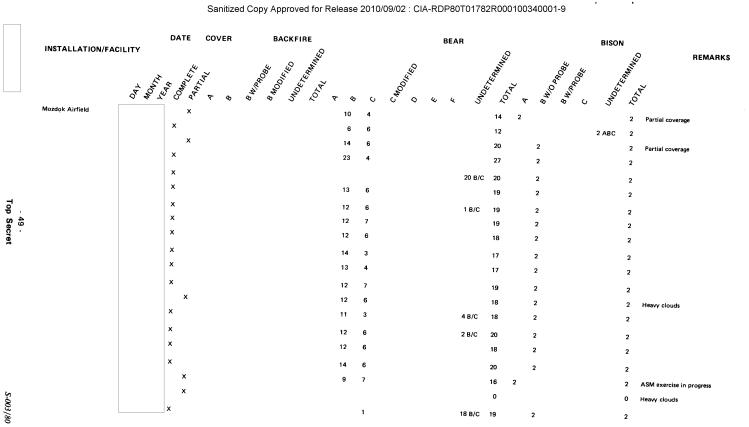
BEAR

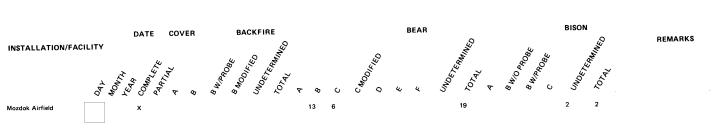
BISON

DATE COVER

BACKFIRE

INSTALLATION/FAC		COVER	BACKFIRE SHOWN A CONTROL OF THE CON		6.	CMODIFIED	E	BEAR	Moer	OJAK COLAKO	, in	8 4 4 4 8 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	BISON	REMARKS
Dolon Airfield	X 7, 0, 6,	4 0 0		7	4	0 0	•	`	3	14	. ~	, ,		BEAR A & E parking areas was cloud covered
	×		15	13	5		2							
	×		15	12	6		2			35				0
	×		4	5	4				6	19				0 Heavy clouds
	×		5	13	5					23				0 Heavy clouds
	× ^		16	13	5		2			36	2			2
	x		15	11	5		2			33	2			2
L														

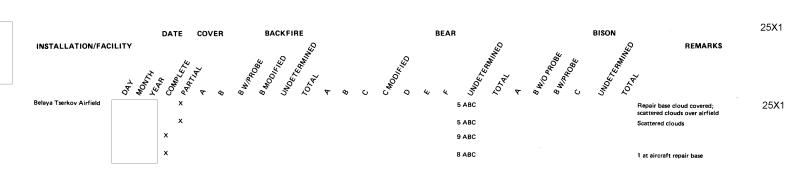




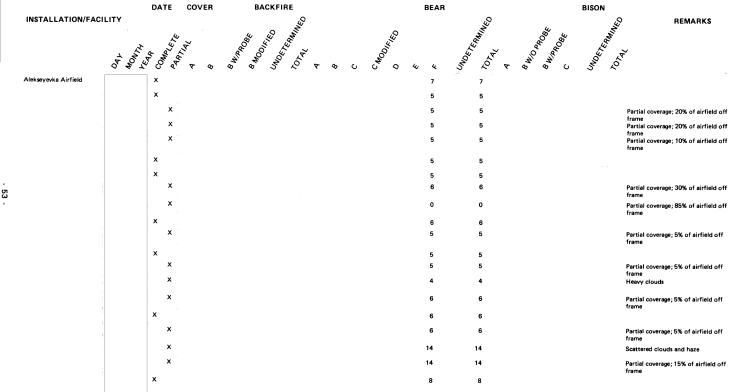
25X1

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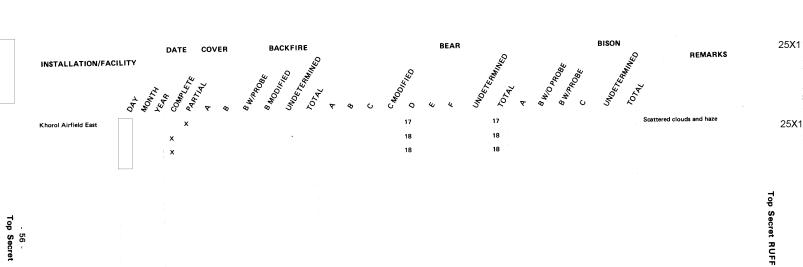
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- 52 -Top Secret



	INSTALLATION/FAC	DATE COVER BACKFIRE SILITY THE STATE OF THE	BEAR Out Out Out Out Out Out Out Out Out Ou	Moeremmes Orze	BISON BISON BO B	REMARKS	25X1
	Alekseyevka Airfield	x	12	12			25 X 1
		x	14	14			
		x	13	13			
		x	12	12			
		×	0	0		Partial coverage; no AOB observed in imaged area	
		x	1 prob	1		Heavy clouds	To
Т ф.		×	11	11		High count of 35 AS-4 shipping containers	Top Secret RUFF
		x	15	15			cre
54 - Secret		x	14	14			
*		x	12	12			Ę
		×	18	18		High count of BEAR for the period	71
		×	prob 18 prob	18		High count of BEAR for the period	
		x	6	6	e e	Heavy clouds	
		×	12	12		Scattered clouds	
		x	3 6 prob	9		Heavy clouds	



5-005/00

		DATE	COVER	BACKFIRE		DEAL	•		BISON	
	INSTALLATION/FACILITY	, Land	*	SWIPOSE OWOONE ON CONFE ON A KINNEO	F F		WOETERMINED	4 W 0 80 80 C C C C C C C C C C C C C C C C	OS REMARK:	S
	8	A San et a s	~ ~ ~		c wooleles	4 4	AND LOT	A B B B C C C C C C C C C C C C C C C C	Work of the Control o	
	Kipelovo Airfield	×			19	20	39		Scattered clouds	
		×			20	23	43			
		×			24	20	44			
		×			10	22	32		Scattered clouds	
		x					37 D/F 37		Scattered clouds	
		×					46 D/F 46		Scattered clouds	
Τo		x			19	23	3 D/F 45			
- 57 - Top Secret		×			14	25	39		Scattered clouds	
ecre		×					44 D/F 44		Scattered clouds	
•		x			12	23	4 D/F 39		Scattered clouds	
		×			19	24	43		Scattered clouds	
		×			9	20	5 D/F 34		Scattered clouds	
		x			8		8		Heavy clouds	
		×			21	23	44		Scattered clouds	
		×			21	22	43			
		x			22	24	46			
		×			24	18	42			
		×					5 prob 5 D		Heavy clouds	
۲۵.		×			23	12	35			
S-003/		×	1	1	16	18	34		Scattered clouds; first sighting of BACKFIRE here	ngs

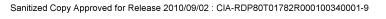
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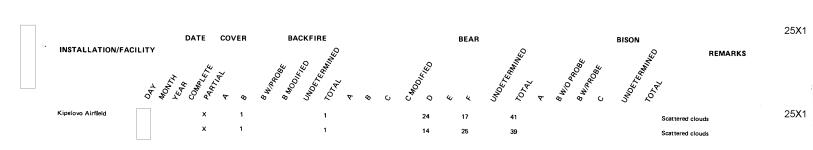
BEAR

BISON

COVER

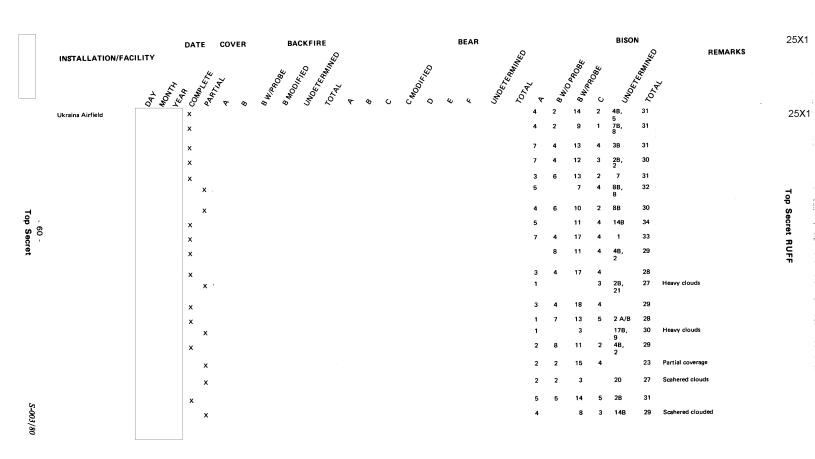
BACKFIRE

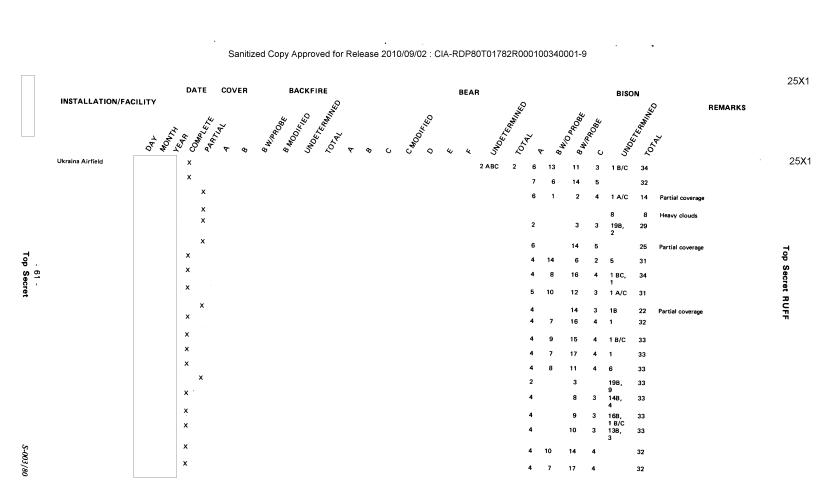




- 58 -Top Secret Top Secret RUFF

25X1 12 27 Haze & partial coverage





INSTALLATION/FAC	ILITY	DATE TO SEE THE SEE TH	COVER	BACKFIRE SAME STORY S	₹ �	3/0 m 2	9	BEAR	UNDETERMINED	₹ *	8410	8 W. S. O. S.	2 708E	BISON	TOY SAMINED	¥	REMARKS
Ukraina Airfield		x x x x								1 2 2	10 7	9 9 3 2	4 4 3	15B 24B 10B 25 11 6 5B	32 32 35 35 18	Haze Haze Heavy clouds Heavy clouds	
3	:																

25X1

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Top Secret RUFF

ADV-2

SECTION 5

Top Secret RUFF

ADV-2

Introduction

175. (TSR) The ADV-2 is a ground-launched, air-breathing, aerodynamic cruise vehicle currently undergoing flight testing at Kapustin Yar Cruise Test Complex D, Site 1 (Figure 3). ADV-2-associated equipment has also been observed at Ramenskoye FTC and at Akhtubinsk FTC.	
176. (TSR) The intended function of the ADV-2 is still unclear. This ground-launched vehicle could be used as a reconnaissance drone, an electronic counter-measures drone, or a cruise missile. However, an apparent correlation exists between the ground-launched ADV-2 and the airborne. BACK FIRE-mounted, airframe observed at Ramenskoye and Akhtubinsk FTCs. This correlation suggests that ADV-2-related technology (or perhaps the ADV-2 itself) is being used in an air-launched cruise vehicle development program.	25 X 1
177. (TSR) Three versions of the ADV-2 have been identified at Kapustin Yar. All three have a fuselage with a dorsal-mounted air intake, positioned forward of the main wings, and a single vertical stabilizer. The three vehicles differ from each other primarily in the design and location of the various control/lifting surfaces.	25X1 25X1
178. (TSR) The ADV-2a, which was first imaged on has aft-mounted clipped delta wings and two sets of foreplanes which have sharply tapered leading and trailing edges with rounded tips.	25 X 1
	25X1

25**X**1

Top Secret RUFF

179. (TSR) The ADV-2b was first observed on and has aft-mounted clipped delta wings and a single set of foreplanes that have straight leading and trailing edges and are squared off at the tips.	25 X 1
180. (TSR) The ADV-2c, which had been tentatively identified as the ADV-3 on has a single set of foreplanes similar in appearance to those of the ADV-2b; however, the wings of the ADV-2c are of a simple delta design and not the clipped delta observed on the other two versions.	25X1
181. (TSR) In addition to the three versions of the ADV-2, several support vehicles associated with this program have been identified.	
182. (TSR) The ADV-2 launcher is a double-axle trailer of irregular configuration. A raised cradle (on which an ADV-2 would be placed) is center-line mounted on the trailer and is in length and in width. No blast shield/deflector is on the launcher.	25X1 25X1 25X1
183. (TSR) The ADV-2 transporter is also a double-axle trailer which is normally canvas covered. The canvas draped over a light framework gives this vehicle a ribbed appearance. This transporter is often attached to a KRAZ-214/255 prime mover.	25 X 1
184. (TSR) A long van/trailer (most likely used for avionics/guidance system checkout of the ADV-2) has also been identified. This chamfered-roofed van/trailer has a total of eight vents, four along each side of the chamfered roof; and two box-like protrusions, one on the aft portion of the roof and one on the front	25X1
of the van/trailer. This ADV-2 checkout van/trailer has also been associated with theairframe mounted on a BACKFIRE B which has been observed at Ramenskoye FTC and Akhtubinsk FTC.	25X1
Historical Development	
185. (TSR) The earliest observable evidence of the ADV-2 program was seen on imagery of of the Ramenskoye FTC. An ADV-2 transporter and an ADV-2 checkout van/trailer were at the southeast end of the Tupolev area on those dates. The first observation of ADV-2-associated equipment at	25X1 25X1
Kapustin Yar was on when an ADV-2 transporter was south of launch pad D-3. A probable ADV-2 transporter was also at the ASM support facility of Akhtubinsk FTC on	25X1 25X1
186. (TSR) The first observation of an actual ADV-2 (a probable ADV-2a) on an ADV-2 launcher occurred on at Kapustin Yar. The ADV-2a and launcher were on launch pad D-3 and, with few exceptions, have been observed there ever since.	25X1
187. (TSR) Although an ADV-2 checkout van/trailer was at Ramenskoye as early as 1974 and two such vehicles were there on no ADV-2 checkout van/trailer was observed at Kapustin Yar until The ADV-2 checkout van/trailer remained at Kapustin Yar through	25X1 25X1
188. (TSR) A second ADV-2 launcher was at Ramenskoye FTC on The canvas-covered launcher and an ADV-2 transporter were in the Tupolev area through The second launcher and a second ADV-2 transporter were subsequently observed at Kapustin Yar on The second ADV-2 launcher remained canvas covered and parked adjacent to the first ADV-2 launcher through	25X1 25X1 25X1 25X1 25X1
189. (TSR) A second cruise vehicle, an ADV-2b, was first identified onat Kapustin Yar. The ADV-2b was on the second ADV-2 launcher which had been moved to its firing position on the northeast end of the launch pad. An ADV-2b was subsequently observed here throughout the remainder of 1979 and early 1980. Only one ADV-2 transporter was at Kapustin Yar on However, same-day coverage of the ASM Support Facility of Akhtubinsk FTC revealed the presence of another ADV-2 transporter.	25X1 25X1
An ADV-2 transporter was observed at Akhtubinsk on several subsequent coverages until	25 X 1
190. (TSR) On airframe mounted on a BACKFIRE B was identified for the first time at the area airfield of Akhtubinsk FTC. The airframe was originally observed in the Tupolev area of Ramenskoye FTC on an ADV-2 checkout van/trailer was parked adjacent to the BACKFIRE-mounted airframe at Akhtubinsk (Figure 4). The BACKFIRE B with the airframe and an ADV-2 checkout van/trailer may have been at Akhtubinsk as early as however, this could not be confirmed because of poor image quality on that date. The	25X1 25X1 25X1 25X1 25X1 25X1
airframe was observed repeatedly at Akhtubinsk until The ADV-2 checkout van/trailer was at the area airfield until	25X1 25X1
191. (TSR) At Kapustin Yar an ADV-2c was first identified on The ADV-2c was on the launcher previously used by the ADV-2b.	25 X 1
192. (TSR) During June 1980, the transfer of ADV-2 equipment from Akhtubinsk FTC to Ramenskoye FTC was observed. Two missile railcars were at Akhtubinsk/Vladimirovka ASM Support Complex on One of the railcars had an empty, extended transfer tray. In addition, a probable ADV-2 transporter was adjacent to the new five-bay hangar at Akhtubinsk FTC. A special-purpose train was on a rail siding at	25 X 1
Akhtubinsk on Components of the train included the two missile railcars observed at the ASM Support Complex on and several flatcars, two of which carried ADV-2 checkout van/trailers. Two missile railcars and two ADV-2 checkout van/trailers were in the Tupolev area of Ramenskoye FTC on In addition, a BACKFIRE B with the airframe was also present. One of the two missile railcars was observed with a probable ADV-2 on the extended transfer tray on	25X1 25X1 25X1 25X1 25X1

- 64 -

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- 65 -**Top Secret** S-003/80

25X1

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